United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Oversight, Committee on Ways and Means, House of Representatives

July 1988

ADP MODERNIZATION

IRS' Progress on the Electronic Filing System

GAO/IMTEC-88-40

GAO

United States
General Accounting Office
Washington, D.C. 20548

Information Management and
Technology Division

B-227683

July 13, 1988

The Honorable J. J. Pickle
Chairman, Subcommittee on Oversight
Committee on Ways and Means
House of Representatives

Dear Mr. Chairman:

The Internal Revenue Service (IRS) is developing an Electronic Filing System to be used by professional tax preparers in filing returns for taxpayers claiming refunds. Because of your continuing interest in IRS' efforts to modernize its automated data processing systems, we are reviewing the agency's progress in implementing electronic filing. This system, currently available in 16 of 63 IRS districts, was initiated in 1986 and holds substantial promise for reducing the costs and time required for IRS to process the growing number of tax returns filed each year. For the 1988 filing season, IRS processed 583,077 electronic returns, and estimates the potential volume of electronic returns filed annually may be 35 million in 1993.

The purpose of this letter is to summarize IRS' efforts in tax year 1988 to: (1) complete testing of the software used in processing electronic returns, (2) assist preparers in resolving difficulties encountered in transmitting returns, and (3) enhance the computer system used by IRS to receive electronic returns from the tax preparers. We also discuss IRS' efforts in addressing three unresolved issues that will affect further expansion and nationwide implementation of the program. These issues are: (1) how to increase participation in the program by professional tax preparers, (2) whether to install equipment and software to operate electronic filing in all or just some of the service centers, and (3) how to address certain technical and legal issues. We will continue to evaluate the Electronic Filing System and will provide a follow-on report to you later this year.

Background

In the early 1980s, IRS decided that the electronic transmission of returns by tax preparers to IRS would be both a practical and cost-beneficial alternative to the mailing of paper tax returns when a refund is claimed. According to the agency, the benefits of electronic filing would include: (1) reduced manual labor costs required to process, store, and retrieve returns, (2) faster processing and retrieval of tax data, and (3) reduced interest IRS is required to pay to taxpayers who file timely

refund returns, but who are not issued refunds within the interest-free period IRS has to process these refunds. Further, IRS reports show that electronically transmitted returns are processed with significantly fewer errors than paper returns. According to IRS figures for the 1988 filing season, as of April 29, 1988, 20 percent of paper returns processed by IRS had errors and only 5.5 percent of those filed electronically had errors. For taxpayers, electronic filing can mean refunds up to 3 weeks sooner, and because IRS can deposit these refunds directly into taxpayer bank accounts, refunds may arrive 3 to 4 days earlier than that. For tax preparers, the ability to provide electronic filing services to taxpayers promises a competitive business edge.

In 1986, the program was initially tested in three metropolitan areas (Cincinnati, Ohio; Phoenix, Arizona; and Raleigh-Durham-Fayetteville; North Carolina), and five preparers electronically filed 24,820 returns to the Cincinnati Service Center. In 1987, 69 preparers in 7 metropolitan areas electronically filed 77,612 returns. For the 1988 filing season, IRS expanded its electronic filing program to 16 IRS districts[1] and a second service center—Ogden, Utah. With the expansion in 1988, IRS accepted a much larger number of preparers—2,339.[2] Of that total, 1,114, or about half, filed all of the 583,077 electronic returns for 1988. Furthermore, H&R Block offices accounted for 82 percent of the total returns filed electronically during the 1988 filing season. We are currently interviewing about 200 randomly selected tax preparers to obtain a variety of information, including the reasons for nonparticipation. We will include this information in our follow-on report to you.

To operate electronic filing at each of the two service centers in 1988, IRS bought the International Business Machines Corporation (IBM) Series I computer, a local area network, and the related computer software. The network consists of IBM and IBM-compatible personal computers, high-resolution graphics display workstations, laser printers, tape drives, and

[1]These districts include the entire states of Alabama, North Carolina, Indiana, Kentucky, Wisconsin, Nebraska, Arizona, Virginia, Utah, Washington, and parts of New York, Ohio, Texas, and California.

[2]As many as three other categories of organizations, in addition to professional tax preparers, can be participants in the development of software or transmission of returns—vendors who supply the preparer with software that has been approved by IRS, service bureaus that may produce the electronic return for the preparer, and communications companies that provide telecommunications service between the preparers and IRS. Since nearly all of the 1988 program participants are tax preparers (2,272 of 2,339), we do not distinguish among the different categories in this report. Instead, we refer to all participants as preparers.

optical disk drives. IRS uses the Series I to receive preparers' transmissions of electronic returns and to transmit certain information to preparers. The local area network was expected to perform two primary functions: (1) retrieve and visually display the electronic returns on the tax examiners' workstations for error correction, and (2) permanently store these returns. IRS also purchased a third network, located at the Cincinnati Service Center, which was used to perform system acceptance testing on the network software.

The basic components needed to prepare and transmit electronic returns include a computer, IRS-approved software to prepare tax returns, and the communications equipment and IRS-approved software to transmit the returns to IRS. In addition, IRS tests and verifies the preparers' competence in transmitting electronic returns.

The electronic filing process begins when a preparer transmits electronic returns to the service center. The Series I receives the transmission and writes the data onto a magnetic tape. The tape is then manually transferred from the Series I to the service center mainframe computer for processing. The mainframe generates an acknowledgment file specifying which returns have been received and accepted or rejected, and writes this file onto magnetic tape. This tape file is hand carried from the mainframe to the Series I for electronic transmission to the individual preparers. Mainframe processing also identifies electronic returns containing errors. After IRS corrects the errors, tapes containing data from accepted, error-free returns are sent, along with data from returns filed on paper, to IRS' National Computer Center in Martinsburg, West Virginia, to update the master files of tax account data.

Objective, Scope, and Methodology

The objective of our work was to summarize the development and implementation of the Electronic Filing System for the 1988 filing season. Specifically, we reviewed the testing performed on the system, the assistance given to preparers experiencing problems, and the enhancements made to the computer that receives the electronically filed returns. We conducted field work between August 1987 and May 1988 at IRS' national office in Washington, D.C., and the Cincinnati and Ogden Service Centers, where electronic returns are processed. We reviewed IRS' plan for conducting system acceptance testing and analyzed the weekly status reports on how well acceptance testing was progressing. In addition, our field work included discussions with both the IRS officials charged with planning and executing the electronic filing program and the IRS staff who tested IRS and vendor software. We also attended a

meeting during which IRS and contractor staff reviewed their progress in implementing the system. Our work was performed in accordance with generally accepted government auditing standards. Responsible IRS officials provided comments on this report and suggested certain changes. We have incorporated these changes where appropriate.

Status of Software Testing for the Local Area Network

IRS achieved some but not all of the expected benefits of electronic filing during the 1988 filing season because of unresolved deficiencies in the local area network's software. Moreover, in an attempt to minimize network downtime resulting from software deficiencies, the service centers allowed revisions to be made to the network's software without the required testing and approval.

Software Deficiencies in the Local Area Network Limited the Benefits of Electronic Filing

IRS procedures require software to pass acceptance testing before it is used to process tax return data. During acceptance testing, the IRS testing staff identifies deficiencies in the software and the software developer makes the necessary revisions to correct the deficiencies. The IRS testing staff then evaluates the revisions to ensure that all deficiencies are corrected before final acceptance.

Testing of the software for the local area network began the third week of January. According to IRS officials, IRS suspended further testing on April 21, 1988, even though 50 software deficiencies identified during testing had not been resolved. When we met with IRS officials on May 31, 1988, to obtain their comments on our draft report, the IRS Assistant Commissioner for Taxpayer Service and Returns Processing told us that IRS was reviewing options with the prime contractor to resolve the software deficiencies.

Despite the incomplete software acceptance testing, IRS was able to achieve partial benefit from the local area network. Specifically, IRS officials concluded that the uncorrected deficiencies in the network's software did not preclude using it to visually display the electronic returns for the error correction process. The visual display allows tax examiners to view the tax returns so that they can locate and correct the errors identified by the mainframe computer during processing of the returns. Therefore, IRS installed the software at the two service centers in time to assist them in correcting errors in electronic returns filed as early as the third week of January. As a result, IRS officials told us that they were

able to more expeditiously process the refunds due taxpayers whose electronic returns contained errors.

Uncorrected deficiencies in the local area network's software precluded IRS from achieving all of the anticipated benefits of the electronic filing system. According to IRS test reports, these deficiencies included defects in the software that precluded IRS from permanently storing the electronic return data onto optical disks. IRS officials told us that this deficiency will require the service centers to perform additional work, because after these software deficiencies are resolved, the corrections to the returns previously identified using the network must be repeated to create a permanent electronic record of the corrections. The service centers plan to create this permanent record primarily from written notations made by tax examiners during the initial correction effort. In addition, the service centers will also have to permanently store electronic returns filed and processed without errors—a process they delayed pending resolution of the software deficiencies. IRS officials in the electronic filing project office said they cannot predict either how long it will take or how much it will cost to complete these tasks. The test reports stated that this and other deficiencies were the main stumbling blocks precluding full use of the network.

Revisions to the Local Area Network Software

In an attempt to minimize the downtime of the local area network resulting from software deficiencies and expedite taxpayer refunds, revisions were made to the network software without the required reporting, testing, and approval. According to an IRS test official and standard procedures, the subcontractor was supposed to correct software deficiencies and make initial revisions only on the Cincinnati test network. The IRS acceptance testing staff was then to test and approve these revisions before they were installed on the two networks used in processing the electronic returns, referred to as the production networks. IRS test and service center officials told us that, in several instances, software deficiencies resulted in the production networks becoming inoperable, and the formal testing process generally added 1 or 2 days to the downtime for each of these deficiencies. To minimize the delay in processing taxpayer refunds, staff at each service center directed the subcontractor[1] to install the revisions directly onto the software of the two production networks without reporting the deficiencies to the IRS testing staff. As a result, IRS had three different versions of network software—one on

[1]We plan to examine, in our follow-on report, the nature of the relationship between IRS and the prime contractor and the subcontractor who are providing software for the local area network.

each of the two production networks and one on the test network—none of which contained all of the revisions.

To resolve this situation, IRS met with prime contractor and subcontractor officials at the end of February 1988, and asked for the installation of the best of the three software versions on the test and two production local area networks. After installation, the acceptance testing staff tested this version to ensure that the 169 deficiencies they had previously identified on the initial version of the software as of March 4, 1988, were no longer present. This process identified 84 remaining deficiencies. As we discussed above, IRS officials told us that IRS suspended testing on April 21, 1988, with 50 deficiencies still unresolved and are continuing to review options with the prime contractor to resolve the deficiencies.

Problems Experienced by Preparers Filing Electronically

IRS officials told us that they received frequent telephone calls from preparers who had problems understanding how to: (1) transmit returns to IRS, and (2) retrieve acknowledgement files—the record of whether IRS has received and accepted the electronic returns for processing—from the Series I computer. To handle these questions, IRS established help desks at the Ogden and Cincinnati Service Centers in February 1988. IRS also bought about 500 hours of time from IBM to enhance its efforts to provide assistance to the preparers.

From February to April 1988, Cincinnati and Ogden responded to 882 calls from 281 different preparers. Help desk staff told us that the problem that generated the most calls was the preparers' inability to retrieve acknowledgement files. IRS officials stated that they believed this occurred because when they tested preparers' ability to transmit returns, IRS software was not in place to allow participants to practice receiving acknowledgement files. In addition, IRS officials explained that other preparers had trouble transmitting files to IRS because they lacked experience with their own computers and communications equipment. For the 1989 filing season, IRS plans to reinstitute help desks by December 1988 and to have contractor staff available to train and assist IRS staff in handling participants' questions.

Preparing the Series I to Receive Transmissions of Electronic Returns

For the 1988 filing season, IRS bought the IBM Series I computer to receive electronically filed returns. According to project office staff, the Series I was selected because it could accommodate multiple incoming telephone lines, it could work without an operator, and it could produce a magnetic tape of the data it received. IRS officials explained that using the Series I prevents unauthorized direct access to tax data available on the service centers' mainframe computers because the preparer's electronic link is only with the Series I—data from the Series I is manually transferred to the mainframe computer on magnetic tape.

After procuring the Series I, IRS had to enhance the computer so that it would meet its needs. For example, additional software had to be developed: (1) to implement a commonly used communications protocol[4] to enable transmissions of data between the Series I and the preparers' computers and (2) to make the magnetic tapes generated by the Series I compatible with the IRS mainframe computer. All work was completed by December 1987, in sufficient time for the beginning of the 1988 filing season.

Unresolved Issues Affecting the Expansion of Electronic Filing

IRS is currently working to resolve three key issues that will affect the development and nationwide implementation of the electronic filing program. These issues are: (1) how to increase participation by professional tax preparers, (2) whether to install equipment and software to operate electronic filing in all or just some of the service centers, and (3) how to address certain technical and legal issues.

Preparer Participation

IRS estimates that as many as 35 million individual tax returns could be filed electronically in 1993. Whether IRS successfully increases the number of electronically filed returns will depend in large part upon whether taxpayers actually realize a benefit from electronic filing and whether preparers, particularly those other than H&R Block, see a competitive advantage in electronic filing and use it to expand the level of taxpayer participation. During 1986-1987, preparers filed 102,432 returns electronically, 86 percent of which were filed by H&R Block offices. Of the 583,077 returns filed electronically during the 1988 filing season, 82 percent were filed by H&R Block offices. To encourage wider

[4]A communications protocol is a strictly defined procedure for initiating, conducting, and terminating communication.

participation, IRS project office officials told us that they plan to vigorously market electronic filing to tax preparers who serve smaller numbers of taxpayers.

Plans to Install Equipment and Software

Although IRS already plans to expand electronic filing from 16 districts to 48 districts in 1989 and to all of its 63 districts in 1990, the agency has not yet decided how many service centers will be equipped to receive the transmissions and process the return data. IRS officials told us that their decision will be influenced not only by what is the most cost-beneficial arrangement, but also by what is most convenient for the tax preparers and taxpayers.

Technical and Legal Issues

Electronic filing raises certain technical and legal issues. The electronic return must be supplemented by a paper form with the taxpayer's and preparer's signatures, W-2s (report of wages earned and taxes withheld), and other required documents in order to be considered valid by IRS. This information is separately mailed to IRS by the tax preparer. After checking to ensure that all the required forms were submitted, IRS stores the paperwork. For the first 2 years of the program, IRS manually verified that the appropriate paperwork was submitted for each electronic return. For 1988, IRS partially automated this procedure by computer matching identifying data, including the taxpayers' social security numbers, from the signature forms received with the same identifying data on electronic returns IRS had accepted.

IRS is considering the legal and technical aspects of two alternatives for expediting the review and storage of signature documents through further automation. The first would be to convert the taxpayer's and preparer's signatures to a digital format that could be transmitted with the electronic return. However, this would require that preparers transmitting returns acquire or obtain the services of expensive digitizing equipment. Another alternative under consideration is to replace the signatures with predesignated, identifying codes to be made part of the electronic returns.

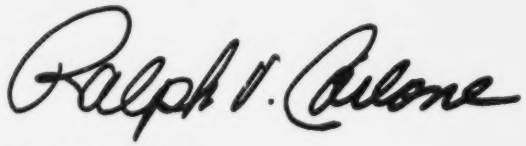
IRS' research division recently began evaluating whether taxpayers still need to submit paper W-2s with their electronic returns. W-2s are examined to detect potentially fraudulent refunds and the research division is considering the impact that eliminating W-2s would have on the fraud detection process. The paperwork involved in electronic filing

would be significantly reduced if W-2s were not required and taxpayer signatures were made part of the electronic return.

We will continue to evaluate the Electronic Filing System and will, later this year, provide a follow-on report on its development and implementation.

As arranged with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from its issue date. We will then make copies available to others upon request.

Sincerely yours,



Ralph V. Carlone
Director

Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202-275-6241

The first five copies of each report are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.